

What we claim is:

- ✓ 1. A two-dimensional code extraction method comprising:
 - inputting image data;
 - scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers);
 - detecting blocks that satisfy specific conditions from said scanned blocks;
 - detecting a region comprising the neighboring and contiguous blocks among said detected blocks; and
 - extracting said detected region as the two-dimensional code region.
- ✓ 2. The two-dimensional code extraction method according to claim 1, wherein a block that includes a ratio of white pixels and black pixels that falls within a specific range is detected as a block satisfying said specific conditions.
- ✓ 3. The two-dimensional code extraction method according to claim 1, wherein a block that includes a ratio between transition points of pixels within the horizontal lines and/or vertical lines of the block and the total number of pixels of the block that falls within a specific range is detected as a block satisfying said specific conditions.
- ✓ 4. The two-dimensional code extraction method according to claim 1, wherein a block in which a vertical and/or horizontal projection of the black pixels included in each of the lines in the blocks fall within a specific range is detected as a block satisfying said specific conditions.

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- ✓ 5. The two-dimensional code extraction method according to claim 1, further comprising:
 - detecting a region including specific numbers of blocks from said detected region comprising the neighboring and contiguous blocks; and
 - determining said detected region as a two-dimensional code region.

✓ 6. The two-dimensional code extraction method according to claim 1, further comprising:

scanning said detected two-dimensional code region from a point within said two-dimensional code region block by block having a predetermined size upward, downward, to the right and to the left of said point;

detecting a position such that a number of black pixels within said scanned block is less than a predetermined value; and

extracting a square area including said detected position as a two-dimensional code region.

✓ 7. A two-dimensional code extraction method according to claim 1, further comprising:

calculating average distance between pairs of black pixels within said scanned blocks; and

extracting said scanned block as a two-dimensional code when it is determined that said calculated average distance exceeds a predetermined value.

✓ 8. The two-dimensional code extraction method according to claim 1, further comprising:

determining an angle of inclination of the two-dimensional code; and

correcting for the angle of inclination if the angle of inclination exceeds a specific value.

✓ 9. The two-dimensional code extraction method according to claim 1, further comprising:

detecting the two-dimensional code from a maximum number of detected contiguous blocks.

10. A computer-readable medium storing a program which, when executed by a computer, causes the computer to execute a two-dimensional code extraction method comprising:

- inputting image data;
- scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers);
- detecting blocks that satisfy specific conditions from said scanned blocks;
- detecting a region comprising the neighboring and contiguous blocks among said detected blocks; and
- extracting said detected region as the two-dimensional code region.

11. The computer-readable medium according to claim 10, wherein a block that includes a ratio of white pixels and black pixels that falls within a specific range is detected as a block satisfying said specific conditions.

12. The computer-readable medium according to claim 10, wherein a block that includes a ratio between transition points of pixels within the horizontal lines and/or vertical lines of the block and the total number of pixels of the block that falls within a specific range is detected as a block satisfying said specific conditions.

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13. The computer-readable medium according to claim 10, wherein a block in which a vertical and/or horizontal projection of the black pixels included in each of the lines in the blocks fall within a specific range is detected as a block satisfying said specific conditions.

14. The computer-readable medium according to claim 10, further comprising:
detecting a region including specific numbers of blocks from said detected region comprising the neighboring and contiguous blocks; and
determining said detected region as a two-dimensional code region.

15. The computer-readable medium according to claim 10, further comprising:
scanning said detected two-dimensional code region from a point within said two-dimensional code region block by block having a predetermined size upward, downward, to the right and to the left of said point;
detecting a position such that a number of black pixels within said scanned block is less than a predetermined value; and
extracting a square area including said detected position as a two-dimensional code region.

16. The computer-readable medium according to claim 10, further comprising:
calculating average distance between pairs of black pixels within said scanned blocks; and
extracting said scanned block as a two-dimensional code when it is determined that said calculated average distance exceeds a predetermined value.

17. The computer-readable medium according to claim 10, further comprising:
determining an angle of inclination of the two-dimensional code; and
correcting for the angle of inclination if the angle of inclination exceeds a specific value.

18. The computer-readable medium according to claim 10, further comprising:
detecting the two-dimensional code from a maximum number of detected contiguous blocks.

19. An apparatus for extracting two-dimensional code from a input document, comprising:
an image scanning unit for scanning the document, and outputting input image data;

a processing unit, connected to said image scanning unit, for processing two-dimensional code extraction process, by scanning said input image data in a square block unit of $M \times N$ pixels (M and N are positive integers), detecting blocks that satisfy specific conditions from said scanned blocks, detecting a region comprising the neighboring and contiguous blocks among said detected blocks, and extracting said detected region.

20. The apparatus for extracting two-dimensional code according to claim 19, further comprising means for reading information from a computer-readable medium contains computer software for said two-dimensional code extraction process.